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(54) ARTICLE FOR BLEACHING TREATMENT

(57)Abstract:

PURPOSE: To obtain an article for bleaching treatment free from blister of a container and change of liquid composition in long term storage under severe conditions and useful in bleaching of clothes and removal of fungi by packing a liquid bleaching agent composition having a specific composition into a container made of a thermoplastic resin having gas permeability.

CONSTITUTION: The article is obtained by packing (B) a liquid bleaching agent composition containing (iv) 0.1-10wt.% of hydrogen peroxide water or organic peracid, (v) 0.5-20wt.% of a surfactant, (vi) 0.1-5wt.% of at least one kind of glycolic acid, lactic acid, etc., and (vii) 0-10wt.% of a bleaching activating agent into (A) a container made of a thermoplastic resin having (i) $\geq 1\text{ml/atm O}_2$ gas permeability and (ii) $\geq 2\text{ml/atm CO}_2$ gas permeability per 1 inner volume at 23°C for 24hr and having (iii) $\leq 0.1\text{g}$ water content (with the proviso that a container has 0.8-10mm average thickness of the bottom of the vessel and 1.0-1.2 flat ratio of drum inner wall part).

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(54)【発明の名称】漂白処理用物品

(57)【要約】

【構成】酸素、二酸化炭素及び水分について特定の透過性を示す熱可塑性樹脂製容器（但し、容器の底部の平均肉厚さが0.8～10mmであり、容器の胴部の内壁部の偏平率が1.0～1.2である部分を少なくとも一部に有する容器である。）に、（イ）過酸化水素又は有機過酸、

（ロ）界面活性剤、（ハ）グリコール酸、乳酸、グルタル酸及びクエン酸並びにこれらのアルカリ金属塩からなる群より選ばれる少なくとも一種、及び（ニ）漂白活性剤をそれぞれ特定範囲で含有する液体漂白剤組成物を充填してなる漂白処理用物品。

【効果】高温下のような苛酷な条件で長期保存された場合でも、内部に充填された液体漂白剤の分解によって生じるガスによる容器のふくれがなく、しかも容器内部の液組成変化も防止できる。

【特許請求の範囲】

【請求項1】 ガス透過性が下記に示される範囲である熟可塑性樹脂製容器（但し、容器の底部の平均肉厚さが0.8～10mmであり、容器の胴部の内壁部の偏平率が1.0～1.2である部分を少なくとも一部に有する容器である。）に、下記に示される液体漂白剤組成物を充填してなる漂白処理用物品。

熟可塑性樹脂製容器のガス透過性

内容積1リットル当りのガス透過性が、24時間、23℃の条件下で、

- (a) 酸素が1ml/atm以上
- (b) 二酸化炭素が2ml/atm以上
- (c) 水分が0.1g以下

である。

液体漂白剤組成物

次の（イ）成分～（ニ）成分を含有する。

- (イ) 成分：過酸化水素又は有機過酸 0.1～10重量%
- (ロ) 成分：界面活性剤 0.5～20重量%
- (ハ) 成分：グリコール酸、乳酸、グルタル酸及びクエン酸並びにこれらのアルカリ金属塩からなる群より選ばれる少なくとも一種 0.1～5重量%

- (ニ) 成分：漂白活性化剤 0～10重量%

【請求項2】 熟可塑性樹脂製容器が、顔料を含有する熟可塑性樹脂からなる層(A)の内側に、顔料を実質的に含有しない熟可塑性樹脂からなる層(B)を有する多層構造を有する容器である、請求項1記載の漂白処理用物品。

【発明の詳細な説明】

【0001】

【産業上の利用分野】 本発明は、衣類の漂白並びに食器・トイレなどの汚れ及びカビの除去等に使用する漂白処理用物品に関する。

【0002】

【従来の技術及び本発明が解決しようとする課題】 従来より、衣類の漂白、食器・トイレなど硬表面の汚れの除去、及びカビの除去などに、次亜塩素酸塩、過酸化水素の水溶液がその液体である使い勝手の良さから広く用いられてきている。通常、これらの液体漂白剤は0.5～10重量%の水溶液として密閉性の高いポリエチレン等の硬質プラスチックによる樹脂ボトルに充填され、家庭用液体漂白剤として広く市販されている。或いはその他の無機過酸、有機過酸の水溶液又は溶媒中に分散されて提供される液体状漂白剤もまた広く知られている。

【0003】 液体漂白剤は、保存条件により分解することがあり、その結果、発生したガスによりボトルに変形をきたしたり、容器が割れて液漏れが生じたりする。そこで、従来、液体漂白剤の保存安定性を向上させる研究がなってきた。例えば次亜塩素酸塩水溶液の場合、特開昭51-37903号公報には特定のポリオキシエチレンアルキルフェノール硫酸化物、特開昭62-89800号公報に

は特定の香料成分の添加が安定性向上に有効であると記載されている。

【0004】 近年、過酸化水素を主成分とする液体酸素系漂白剤が多数市販されている。これらの酸素系漂白剤は、色・柄物にも使え、匂いも塩素系漂白剤に比べ良いことから、衣料用漂白剤としてはかなり普及している。

【0005】 これらの過酸化水素水溶液を用いた漂白剤の安定性の向上についても種々検討がなされ、例えば、特公昭40-7774号公報には酸性ピロリン酸ソーダ、中性ピロリン酸ソーダ及び酸性ピロリン酸カリを併用した貯蔵安定な弱酸性液体漂白剤が、特開昭49-52784号公報にはアルキリデンジホスホン酸、エチレンジアミン四酢酸、ジエチレントリアミン五酢酸及びニトリロトリメチレンホスホン酸から選ばれた有機酸と可溶性錫塩とアンモニウム塩を配合したpHが0.5～7の安定な液体漂白剤が、特開昭52-103386号公報にはポリ- α -ヒドロキシアクリル酸からなる過酸化水素安定化剤が、特開昭54-10309号公報にはマグネシウム化合物と酸類とに水を加えて中和反応的に錯化を行なわせ、親水性を付与した液状物がpH4～6で過酸化水素の分解を抑制することが、特開昭55-108500号公報には有機酸、リン酸、ホウ酸から選ばれる酸と窒素化合物を配合したpHが1.8～5.5の安定な液体漂白剤が、特開昭55-76161号公報には縮合リン酸塩を安定化剤として使用したアルカリ性の過酸化水素漂白系でポリ- α -ヒドロキシアクリル酸塩を配合すると相乗安定化効果を発揮することが、特開昭57-154457号公報にはアクリル酸とアクリル酸エステル及び/又はポリエチレングリコールメタクリレートの共重合体からなる過酸化水素系漂白剤の安定助剤が、特開昭62-185797号公報にはポリ- α -ヒドロキシアクリル酸塩と有機ホスホン酸塩を併用した過酸化水から、衣料用漂白剤としてはかなり普及している。しかしながら、酸素系漂白剤は、特に台所のハードな汚れに対しては充分な漂白力とは言えず、種々のキレート剤の併用が検討されており、その結果、各種キレート剤を併用することにより、効果を大きく向上することが確認されている。

【0006】 しかし、キレート剤を併用する場合、その配合量は比較的多くする必要があり、またキレート剤の効果をより大きく発現させるために、過酸化水素がより不安定となる領域にpHを設定する必要が生じる。

【0007】 更に、グリコール酸、乳酸、クエン酸等の有機キレート剤に関しては更に二酸化炭素が保存中に発生することが観察され、ボトルの膨らみ・変形の一因となるため、二酸化炭素の透過・排出に関してもキレート剤を併用するためには必須となる。例えば、特開昭59-164400号に開示されているキレート剤を併用した過酸化水素系漂白剤は、保存中の分解によって二酸化炭素が発生し、製品として上市するのは難しい。

【0008】 以上のように、ボトル容器入りの漂白剤組成物の保存安定性の向上には、組成物の配合面でのみ高

安定化を実現できてもそれだけでは商品として不充分であり、漂白剤組成物を充填する容器についても充分な性能が要求されるが、今までに液漏れせずにガスを透過させ得るボトルという観点からの研究はあまりなされていない。

【0009】従って、本発明の課題は、特に、苛酷な条件のもとで長期保存された場合でも、内部に充填された液体漂白剤の分解によって生じるガスによる容器のふくれ（以下、容器のふくれという）がなく、しかも容器内部の液組成変化も防止し得る容器入り液体漂白剤を提供することにある。

【0010】

【課題を解決するための手段】本発明者らは、高温長期間貯蔵時においても漂白剤の分解によって生じるガスによるふくれが生じることがなく、しかも内部の液組成変化も防止し得る容器入り漂白剤を開発すべく鋭意研究を重ね、容器のふくれの原因となるガスは酸素のみならず、二酸化炭素であることを見い出し、さらにその結果、特定のガス透過性及び水分透過性を持ち、特定の形状を有する熱可塑性樹脂製容器が目的に適合することを見出し、本発明を完成するに至った。

【0011】即ち、本発明はガス透過性が下記に示される範囲である熱可塑性樹脂製容器（但し、容器の底部の平均肉厚さが0.8～10mmであり、容器の胸部の内壁部の偏平率が1.0～1.2である部分を少なくとも一部に有する容器である。）に、下記に示される液体漂白剤組成物を充填してなる漂白処理用物品を提供する。

熱可塑性樹脂製容器のガス透過性

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- (b) 二酸化炭素が2ml/atm以上
- (c) 水分が0.1g以下

である。尚、ガス透過性の測定法は実施例において示す。

液体漂白剤組成物

次の（イ）成分～（ニ）成分を含有する。

- (イ) 成分：過酸化水素又は有機過酸 0.1～10重量%
- (ロ) 成分：界面活性剤 0.5～20重量%
- (ハ) 成分：グリコール酸、乳酸、グルタル酸及びクエン酸並びにこれらのアルカリ金属塩からなる群より選ばれる少なくとも一種 0.1～5重量%
- (ニ) 成分：漂白活性化剤 0～10重量%。

【0012】【熱可塑性樹脂製容器】本発明における熱可塑性樹脂製容器は、前記のような特定のガス透過性を有することが重要であり、この要件が満足されるように、熱可塑性樹脂の種類及び、該容器の肉厚さを選定する必要がある。この要件が満たされない場合には、容器のふくれがなく、しかも容器内部の液組成変化がない、本発明が所望する漂白処理用物品を得ることができない。

い。

【0013】本発明で使用し得る熱可塑性樹脂としては、ポリエチレン（高密度ポリエチレン、低密度ポリエチレン、直鎖状低密度ポリエチレン等）、ポリプロピレン（ホモポリマー、ブロックポリマー、ランダムポリマー）、ポリブテン等のポリオレフィン、ポリ塩化ビニル又はポリスチレン系ポリマー（ポリスチレン、アクリロニトリルースチレン樹脂、ステレンーブタジエンプロック共重合体）又は、これらの混合物等が挙げられる。この中でも特にポリオレフィンが好ましい。

【0014】ポリオレフィン系樹脂を用いる場合、ポリエチレン系樹脂、ポリプロピレン系樹脂、又はポリブテン系樹脂等を単独で用いても、又、適当に混合して用いてもよいが、本発明の容器をブロー成形などの熟成形により連続多量生産を行う為には、同系統の樹脂を用いる方が効果的である。

【0015】本発明の容器の胸部（図1参照。胸部とは容器のキャップをはめる部分及び底部を除いた部分をいう。）の平均肉厚さは、使用する樹脂の種類及びその密度にも依り、本発明の構成要件であるガス透過性を満足するよう決めればよいが、通常0.4～1.5mm、好ましくは0.5～1.4mmの範囲である。

【0016】また、本発明において容器の底部（図1参照）の肉厚さは使用される熱可塑性樹脂の種類の如何に拘らず、0.8～10mm、好ましくは1.0～5.0mmの範囲となるように設定することが重要である。容器底部の肉厚さがこの範囲にはいらない場合、本発明の所望する目的を達成することができない。

【0017】さらに、本発明において容器の胸部の内壁部（図1参照）の偏平率**（下記に定義される）が、1.0～1.2、好ましくは1.0～1.1である部分を少なくとも一部に有することが重要である。この要件が満足されない場合にも、本発明が所望する目的を達成することができない。

**偏平率の定義

ボトルの把手部分以外の胸部でボトル断面の長径と短径を測定し（図5参照）、

偏平率 = (ボトル断面の長径) / (ボトル断面の短径)により算出されるものである。

【0018】図2に本発明において使用される容器の好ましい例を示す断面略示図を挙げる。

【0019】また、通常の漂白基剤は耐光性に問題のあるものが多いため、ボトルは遮光性が必要になる場合がある。この場合はボトル成形用の樹脂に種々の顔料が添加される。有機顔料としては、アゾ系顔料、アントラキノン系顔料、フタロシアニン系顔料、ペリノン系顔料、ペリレン系顔料、キリクリドン系顔料、ジオキサジエン系顔料、チオインジゴ系顔料、イソインジリノン系顔料あるいはこれらの混合物などを用いることができる。また、無機顔料としてはペんがら、チタンホワイト、チタ

ンイエロー、焼成顔料グリーン、酸化クロム、コバルトブルー、シリカ、アルミナなどの金属酸化物類、カドミウムイエロー、カドミウムレッド等の硫化物類、群青等のケイ酸塩類、黄鉛、クロムバーミリオン等のクロム酸塩類、カーボンブラック等のカーボン類、タルク、カオリン、クレー等の粘土類、炭酸カルシウム、炭酸マグネシウム等の無機塩類あるいはこれらの混合物などを用いることができる。特にフタロシアニン系顔料、アゾ系顔料、金属酸化物類顔料あるいはこれらの混合物が耐候性、遮光性、耐熱性、発色性、耐薬品性等に優れており好適に用いられる。

【0020】ここでフタロシアニン系顔料、アゾ系顔料を用いる場合、その種類、形状などについて特に制限されることはなく、例えば高度に精製されたもの、あるいは熱処理されて不純物などを除去したものも用いることができ、もしくは若干の不純物が混入していても差しつかえない。

【0021】また、上記有機顔料と共に金属酸化物のうちチタンホワイトを用いる場合、チタンホワイトは通常二酸化チタン (TiO_2) を指称するが、これに少量の一酸化チタン (TiO) や三酸化二チタン (Ti_2O_3) の混入したものを用いても差しつかえなく、あるいは少量のシリカ、アルミナその他重金属、金属酸化物等不純物を含んでいても全く問題なく使用し得る。この酸化チタンの形状等についても特に制限はない。

【0022】又、本発明の容器の製造にあたっては、熱可塑性樹脂に各種の酸化防止剤、紫外線吸収剤、帯電防止剤（アミン化合物、高級アルコール、モノグリセリド等）、滑剤等を加えることができる。

【0023】以上、述べた本発明の容器を使用すれば、大抵の場合、容器のふくれは防止できるが、更に顔料を含有する熱可塑性樹脂からなる層(A)の内側に、顔料を含有しない熱可塑性樹脂からなる層(B)を有する熱成形多層構造容器とすれば、更に容器のふくれが少なく、容器のすわり安定性の良いボトル容器となる。

【0024】熱成形多層構造容器とする場合に(A)層に添加される顔料は上記のものが使用できる。また、層(A)及び層(B)の層厚比は特に制限ではなく、用いる熱可塑性樹脂や顔料の種類、配合量などにより適宜選択して決定すればよい。通常、層厚比は2層容器の場合、全層厚を100とすると層(B)を好ましくは0.01～50に対し層(A)を99.99～50、特に好ましくは層(B)1～45に対し層(A)を99～55の割合とすればよい。

【0025】本発明に用いられる容器は種々の方法により製造することができ、特に制限はない。また、多層容器とする場合には、例えば、上記の如き層(A)および層(B)を有する積層体シートをプロー成形などの熱成形により所望の多層容器を得ることができる。本発明に使用される容器の成形は通常行われる条件でよい。

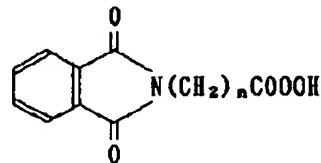
【0026】〔液体漂白剤組成物〕 本発明の容器に充填

される液体漂白剤組成物は、前記のように（イ）成分～（ニ）成分を含有する。

【0027】（イ）成分：過酸化水素又は有機過酸が0.1～10重量%使用される。ここで有機過酸とは、ドデカンジ過酸、モノ過フタル酸、ジ過フタル酸又は下記一般式で表される有機過酸

【0028】

【化1】



〔 n ：1～10の数を示す。〕
【0029】等である。

【0030】（ロ）成分：本発明の液体漂白剤組成物には、界面活性剤が0.5～20重量%、好ましくは1～15重量%使用される。本発明に用いられる界面活性剤としては、アニオン性界面活性剤、ノニオン性界面活性剤、両性活性剤、又はこれらの混合物などが挙げられる。アニオン性界面活性剤としては例えば次のものが挙げられる。ここでアルキル又はアルケニルとは C_8 ～ C_{24} の炭素鎖を有するものを言う。例えば、直鎖又は分岐鎖アルキルベンゼンスルホン酸塩、アルキル又はアルケニルエーテル硫酸塩、アルキル又はアルケニル硫酸塩、オレフィンスルホン酸塩、アルカンスルホン酸塩、飽和又は不飽和脂肪酸塩、 α -スルホ脂肪酸エステル、 α -スルホ脂肪酸塩等が挙げられ、またノニオン性界面活性剤としては、ポリオキシアルキレンアルキル又はアルケニルエーテル、ポリオキシエチレンアルキルフェニルエーテル、高級脂肪酸アルカノールアミド又はそのアルキレンオキサイド付加物、ショ糖脂肪酸エステル、脂肪酸グリセリンモノエステル、アルキルアミノオキサイド、ブロニック型界面活性剤、ソルビタン脂肪酸エステル又はそのエチレンオキサイド付加物等が挙げられる。界面活性剤としてはこの他には、カルボベタイン、スルホベタイン、アミノオキサイド等が挙げられる。

【0031】（ハ）成分：本発明に使用されるキレート剤は、液体漂白剤組成物の保存時の安定化及び漂白洗净効果の向上に役立つ。ここで使用されるキレート剤はグリコール酸、乳酸、グルタル酸、クエン酸及びこれらのアルカリ金属塩からなる群より選ばれる少なくとも一種であり、使用量は0.1～5重量%、好ましくは0.2～4重量%使用される。

【0032】本発明において、所望により、他のキレート剤を併用することができる。これらのキレート剤（以下、併用キレート剤という。）としては、

（1）オルソリン酸、ピロリン酸、トリポリリン酸、メタ

リン酸、ヘキサメタリン酸、フィチン酸等のリン酸系化合物又はこれらのアルカリ金属塩又はアルカノールアミン塩。

(2) エタン-1,1-ジホスホン酸、エタン-1,1,2-トリホスホン酸、エタン-1-ヒドロキシ-1,1-ジホスホン酸およびその誘導体、エタンヒドロキシ-1,1,2-トリホスホン酸、エタン-1,2-ジカルボキシ-1,2-ジホスホン酸、メタンヒドロキシホスホン酸等のホスホン酸又はこれらのアルカリ金属塩又はアルカノールアミン塩。

(3) 2-ホスホノブタン-1,2-ジカルボン酸、1-ホスホノブタン-2,3,4-トリカルボン酸、 α -メチルホスホノコハク酸等のホスホノカルボン酸又はこれらのアルカリ金属塩又はアルカノールアミン塩。

(4) アスパラギン酸、グルタミン酸、グリシン等のアミノ酸又はこれらのアルカリ金属塩又はアルカノールアミン塩。

(5) ニトリロ三酢酸、イミノ二酢酸、エチレンジアミン四酢酸、ジエチレントリアミン五酢酸、グリコールエーテルジアミン四酢酸、ヒドロキシエチルイミノ二酢酸、トリエチレンテトラミン六酢酸、ジエンコル酸等のアミノポリ酢酸又はこれらのアルカリ金属塩又はアルカノールアミン塩。

(6) ジグリコール酸、オキシジコハク酸、カルボキシメチルオキシコハク酸、酒石酸、シュウ酸、リンゴ酸、オキシジコハク酸、グルコン酸、カルボキシメチルコハク酸、カルボキシメチル酒石酸などの有機酸又はこれらのアルカリ金属塩又はアルカノールアミン塩。

(7) ゼオライトAに代表されるアルミニケイ酸のアルカリ金属塩又はアルカノールアミン塩。

(8) アミノポリ(メチレンホスホン酸)及びそのアルカリ金属塩又はアルカノールアミン塩、ポリエチレンポリアミンポリ(メチレンホスホン酸)及びそのアルカリ金属塩又はアルカノールアミン塩。

【0033】などが挙げられる。この場合における併用キレート剤の使用量は0~10重量%、好ましくは0.001~5重量%である。

【0034】(二)漂白活性化剤：本発明に使用される漂白活性化剤は、本発明の物品の漂白性能を向上させる為に使用されるものである。この目的に使用し得る従来公知の漂白活性化剤はすべて使用し得るが、例えばアルカノイルオキシベンゼンスルホン酸もしくはその塩、アルカノイルオキシ安息香酸もしくはその塩、テトラアセチルエチレンジアミン又は特開昭63-258447号、特開昭63-315666号、もしくは特開平3-17196号記載の漂白活性化剤等が例示される。漂白活性化剤の使用量は0~10重量%、好ましくは0.5~7重量%である。

【0035】本発明の漂白剤組成物は、基本的には(イ)成分~(ハ)成分、更に必要に応じて(ニ)成分を水中に溶解又は分散させたものであるが、低温での液

の安定化及び凍結復元性を改善したり、高温での液分離を防止する目的でハイドロトロープ剤を配合しても差し支えない。このようなハイドロトロープ剤としては、一般的には、トルエンスルホン酸塩、キシレンスルホン酸塩などに代表される短鎖アルキルベンゼンスルホン酸塩、エタノール、エチレングリコール、プロピレングリコール、ヘキシレングリコール、グリセリンなどに代表されるアルコールおよび多価アルコール、及び下式で表されるアルキレングリコールエーテル等が挙げられる。

【0036】

【化2】 $R^1-O(QO)_s-R^2$

(式中、

R^1 : $C_1 \sim C_6$ のアルキル基を示す

R^2 : 水素原子又はメチル基を示す

Q : 炭素数2~3のアルキレン基を示す

s : 1~12の数を示す。)

ハイドロトロープ剤は、漂白剤組成物中において0~30重量%程度配合することができる。

【0037】さらに、本発明の漂白剤組成物において、種々の化合物を含有させることができる。例えば、過酸化水素の安定化剤として知られているリン酸、バルビツール酸、尿酸、アセトアニリド、オキシキノリンやフエナセチンなどに代表されるアミノポリカルボン酸類、及び、DL- α -トコフェノール、没食子酸誘導体、ブチル化ヒドロキシアニソール(BHA)、2,6-ジ-tert-ブチル-4-メチルフェノール(BHT)などを添加することができる。これらの安定化剤の添加量は過酸化水素の濃度にもよるが通常0~5%程度、好ましくは0.01~3%含有させるのがよい。

【0038】さらに、本発明において、変褪色防止剤として公知の物質を含むことができる。このような物質としては、フェニルアラニン、ヒスチジン、リジン、チロシン、メチオニン等のアミノ酸及びアミノ酸塩類、及びヒドロキシミノジ酢酸等のアミノ又はイミド化合物、更には、アクリロニトリルと第四級アンモニウム基を有するアクリロニトリルと共に重合可能なモノマーの1種又は2種以上のコポリマー等である。尚、アミノ酸には光学異性体が存在するが、本発明の効果に於いては光学異性体は関与しない。従って、化学的に合成したアミノ酸を使用する事も可能である。

【0039】白物繊維に対する漂白効果を増す為に蛍光増白剤として、チノパール(Tinopal) CBS [チバ・ガイギー(Ciba-Geigy)社製]、チノパール SWN [チバ・ガイギー社製]やカラー・インデックス蛍光増白剤28, 40, 61, 71などのような蛍光増白剤を0~5%添加しても良い。

【0040】組成物の粘度を高め使い勝手を向上させる目的で増粘剤を0~20%添加することが可能である。一般的には、ポリアクリル酸塩、アクリル酸マレイン酸共重合体、カルボキシメチルセルロース誘導体、メチルセ

ルロース、ヒドロキシメチルセルロースといった合成高分子、キサンタンガム、グアーガム、ケルサンといった天然高分子、モンモリロナイト、ビーガムといった水膨潤性粘土鉱物などである。又、特開平1-319600号公報に記載されているように、両性界面活性剤とアニオン界面活性剤を組合せることで粘弾性レオロジー特性を持たせることも可能である。

【0041】又、本発明には更に、染料や顔料のような着色剤、香料、シリコーン類、殺菌剤、紫外線吸収剤、無機電解質等の種々の微量添加物を適量（各々0～約2%程度）配合する事が出来る。尚、染料としては酸性溶液で耐過酸化水素性を有する酸性染料が特に好ましい。

【0042】又、本発明組成物において、漂白性能向上させる為、従来公知の酵素（セルラーゼ、アミラーゼ、プロテアーゼ、リバーゼ等）を必要に応じ配合することができる。

【0043】

【実施例】以下、実施例を挙げて説明するが、本発明はこれらの実施例に限定されるものではない。

【0044】表2に示す熱可塑性樹脂及び顔料より容器を成形し、図3に示す形状の容器を得た。得られた各容器について、下記①の方法で容器の底部の平均肉厚さの測定を行い、下記②の方法で容器の胴部の内壁の偏平率の測定を行い、下記③の方法でガス透過性を測定した。さらに、表1に示す組成の液体漂白剤組成物をそれぞれの容器に充填密封し、保存後の容器の膨らみを下記④の方法で評価した。その結果を表2に示す。

【0045】①容器の底部の平均肉厚さの測定方法

図4(a, b)のように縦横十字になるように容器底部を切断し、断面の厚さを計5カ所ノギスにより測定を行い平均値をとる。図4中、×印をつけた箇所は厚みを測定した箇所である。

【0046】②容器の胴部の内壁部の偏平率の測定

図5のように、容器断面の長径(X)、短径(Y)を測定し、下記の演算式で算出する。

【0047】

【数1】

$$\text{偏平率} = \frac{\text{容器断面の長径}}{\text{容器断面の短径}}$$

【0048】③容器のガス透過性の測定

(1) 酸素及び二酸化炭素透過性の測定

容器にそれぞれの気体を充填し、24時間、23℃の条件下で下記の測定機により透過性を測定した。

測定機：ガスクロ工業（株）製

「ガス透過試験機」GPM-250

(2) 水分透過性の測定

容器に水を充填し、24時間、23℃の条件下で下記の測定機により透過性を測定した。

【0049】測定機：Lyssy社（フランス国）製

「ガス透過試験機」。

【0050】④保存後の容器変形の評価

表1に示す液体漂白剤組成物を表2に示す各容器（満注量780ml）に600ml充填密封し、40℃条件下で30日間保存し、保存テスト後サンプルを外部に取り出し、容器の膨らみを肉眼で観察し、評価した。ここで、容器の膨らみと匂いの変化の評価基準は以下の通りである。尚、各試験は10本の容器で行い、○、△、×の本数で結果を示した。

・容器の膨らみの評価基準

○…変化なし

△…容器底部がやや膨らんでいるがすわりは悪くない

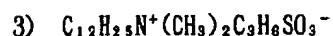
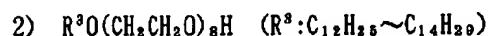
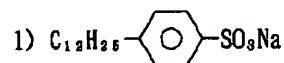
×…容器底部がやや膨らんでおりすわりが悪くグラグラする

【0051】

【表1】

	漂白剤 I	漂白剤 II	漂白剤 III	漂白剤 IV	漂白剤 V
過酸化水素	5	5	5	5	5
直鎖アルキルベンゼンスルホン酸Na ¹⁾	0.5	0.5	3.0	0.5	—
刹オキシエチレンアルキルエーテル ²⁾	2.0	4.0	1.0	1.0	—
スルホベタイン ³⁾	—	—	—	—	10.0
ノナノイルキシベンゼンスルホン酸ソーダ	—	—	—	—	3.0
グリコール酸	0.5	—	—	—	—
グルタル酸	—	—	0.5	—	—
ニトリロトリカルボン酸	—	—	—	0.5	1.0
ピロリン酸カリウム	—	3	—	—	—
トリポリリン酸Na	—	—	—	0.05	—
1-ヒドロキシエチレン, 1-ジメチル酸	0.05	0.05	0.1	—	—
NaOH	微量 ⁴⁾	微量 ⁵⁾	2	微量 ⁵⁾	2
香 料	0.05	0.05	0.05	0.05	0.05
イオン交換水	バランス	バランス	バランス	バランス	バランス
pH	3	5	13.5	5	13.5

注)



4) 系をpH 3に調製するための量

5) 系をpH 5に調製するための量

【0052】

【表2】

		本差明品						比較品		
		H D P E ¹⁾	L D P E ²⁾	P S ³⁾	95	95	95	95	95	95
組成(重量%)	容器成形用樹脂及び顔料	チタンホワイト シアニングリーン カーボンブラック	5 0.25 0.25	4.5 5 0.25	5 0.25 0.25	4.5 0.25 0.25	4.5 0.25 0.25	5 5 5	5 5 5	4.5 0.25 0.25
容器	ガス透過性	O ₂ (ml/atm) CO ₂ (ml/atm) 水分 (g)	3.8 11.0 0.02	2.0 6.0 0.01	5.0 15.1 0.03	6.1 17.5 0.04	3.3 9.5 0.02	3.0 8.7 0.02	5.5 16.6 0.04	0.26 17.1 0.04
底部の平均肉厚さ (mm)	1.5	1.9	2.5	2.0	2.1	1.8	1.6	2.3	0.6	1.1
	胴部の内壁の偏平率	1.00	1.16	1.10	1.00	1.10	1.05	1.10	1.00	1.00
充填した漂白剤		I	II	I	III	IV	V	IV	I	I
評価結果	40°C・30日保存	○	10	10	10	10	10	10	0	1
	後の容器の変化△ (本)	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	4 4 6	0 0 5
	内容物減少量(g)	0.3	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.7
									0.8	3.2

【0053】1)高密度ポリエチレン樹脂；昭和電工

(株)製ショーレックス5503D使用

2)低密度ポリエチレン樹脂；三井ボリケミカル(株)製

ミラソン401使用

3)ポリスチレン樹脂；昭和電工(株)製HIPS使用

【図面の簡単な説明】

【図1】本発明に用いられる熱可塑性樹脂製容器の断面略示図。

【図2】本発明に用いられる熱可塑性樹脂製容器の例を

示す断面略示図。

【図3】実施例に用いた熱可塑性樹脂製容器を示す略示図。

【図4】容器底部の測定箇所を示す略示図。

【図5】容器胴部の断面略示図。

【符号の説明】

1…キャップ

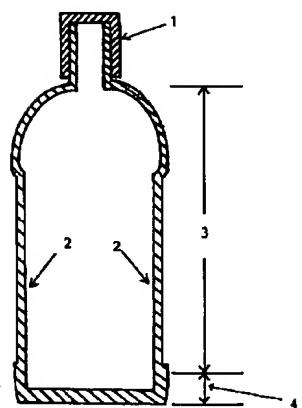
2…内壁

3…胴部

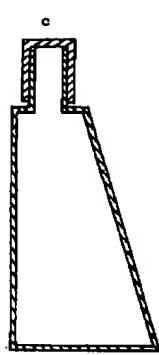
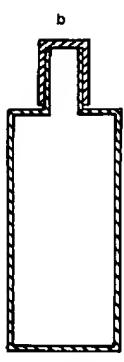
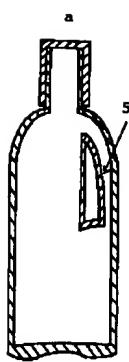
4…底部
5…把手

X…長径
Y…短径

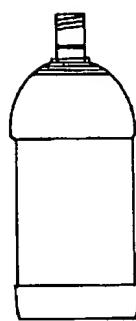
【図1】



【図2】

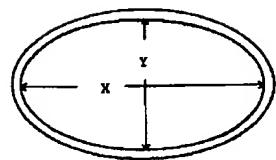
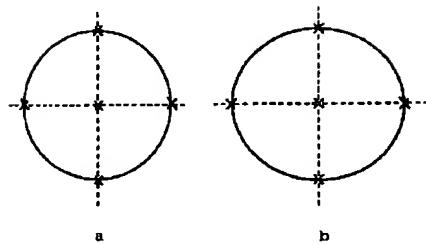


【図3】



【図5】

【図4】



CLAIMS

[Claim(s)]

[Claim 1] the article for bleaching processing which comes to fill up the liquid bleaching agent constituent with which gas permeability is shown in the container made of thermoplastics (however, average thickness [] of the pars basilaris ossis occipitalis of a container -- 0.8-10mm -- it is -- oblateness [] of the wall section of the drum section of a container -- it is the container which has the part which are 1.0-1.2 at least in a part.) which is the range shown below below. The gas permeability per 1l. of gas permeability content volume of the container made of thermoplastics is (a) under conditions (24 hours and 23 degrees C). Oxygen is 1 ml/atm. It is (b) above. Carbon dioxides are 2 ml/atm. It is (c) above. Moisture is 0.1g or less. a liquid bleaching agent constituent -- the following (b) component - a (d) component are contained.

(b) component: -- a hydrogen peroxide or organic acid peroxide 0.1 - 10-% of the weight (**) -- component: -- surfactant 0.5 - 20-% of the weight (Ha) component: -- it is chosen out of the group which becomes a glycolic acid, a lactic acid, a glutaric acid, and a citric-acid list from these alkali-metal salts -- at least -- a kind 0.1 - 5-% of the weight (d) component: -- 0 - 10 % of the weight of bleaching activators -- [Claim 2] Layer which the container made of thermoplastics becomes from the thermoplastics containing a pigment (A) Layer which consists of thermoplastics which does not contain a pigment substantially inside (B) Article for bleaching processing according to claim 1 which is the container which has the multilayer structure which it has.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the article for bleaching processing used for clearance of dirt, such as tableware and a toilet, and mold etc. at the bleaching list of clothing.

[0002]

[The technical problem which a Prior art and this invention tend to solve] Before, the water solution of a hypochlorite and a hydrogen peroxide has been widely used for clearance of the dirt of hard surfaces, such as bleaching of clothing, and tableware, a toilet, clearance of mold, etc. from the goodness of the user-friendliness which is the liquid. Usually, these liquid bleaching agents The resin bottle which consists of rigid plastics, such as high polyethylene of sealing nature, as 0.5 - 10% of the weight of a water solution is filled up, and it is widely marketed as a home liquid bleaching agent. Or the liquid bleaching agent which is distributed and is offered into the water solution of other inorganic peroxy acids and organic acid peroxide or a solvent is also large, and it is known.

[0003] A liquid bleaching agent causes deformation to a bottle by the gas which may decompose according to preservation conditions, consequently occurred, or a container breaks and a liquid spill produces it. Then, the research which raises the preservation stability of a liquid bleaching agent has been made conventionally. For example, in the case of the hypochlorite water solution,

it is indicated by a specific polyoxyethylene alkylphenol sulfation object and JP,62-89800,A at JP,51-37903,A that addition of a specific perfume component is effective in the improvement in stability.

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[0005] Examination should do many things also about improvement in the stability of the bleaching agent using these hydrogen-peroxide-solution solutions. for example, the storage which used together acid sodium pyrophosphate, neutral sodium pyrophosphate, and acid potassium pyrophosphate to JP,40-7774,B -- a stable weak acidic liquid bleaching agent To JP,49-52784,A, alkylidene diphosphonic acid, ethylenediaminetetraacetic acid, pH which blended the organic acid and fusibility tin salt which were chosen from a diethylenetriamine pentaacetic acid and nitrilotrimethylenephosphonate, and ammonium salt The stable liquid bleaching agent of 0.5-7 The hydrogen-peroxide stabilizing agent which becomes JP,52-103386,A from a Polly alpha-hydroxy acrylic acid Add water to a magnesium compound and acids at JP,54-10309,A, and it is made to complex in neutralization reaction. That the liquefied object which gave the hydrophilic property controls disassembly of a hydrogen peroxide by pH 4-6 pH which blended with JP,55-108500,A the acid chosen from an organic acid, a phosphoric acid, and a boric acid and the nitride 1.8-5.5 A stable liquid bleaching agent Demonstrating a multiplication stabilization effect, if Polly alpha-hydroxy acrylate is blended with JP,55-76161,A by the alkaline hydrogen-peroxide-bleaching system which used the condensed phosphate as a stabilizing agent The stability assistant of the hydrogen-peroxide system bleaching agent which becomes JP,57-154457,A from the copolymer of an acrylic acid, acrylic ester, and/or polyethylene-glycol methacrylate From the peroxidation water which used together Polly alpha-hydroxy acrylate and organic phosphonate, it has spread through JP,62-185797,A considerably as a bleaching agent for garments. However, improving effectiveness greatly is checked by being unable to say to be an oxygen system bleaching agent sufficient bleaching force to the hard dirt of especially a kitchen, considering concomitant use of various chelating agents, consequently using various chelating agents together.

[0006] However, when using a chelating agent together, in order to make [many / comparatively] the loadings and to make the effectiveness of a chelating agent discover more greatly, it will be necessary to set pH as the field to which a hydrogen peroxide becomes more unstable.

[0007] Furthermore, since generating further about organic chelating agents, such as a glycolic acid, a lactic acid, and a citric acid, while a carbon dioxide saves is observed and it serves as a cause of a swelling and deformation of a bottle, it becomes indispensable in order to use a chelating agent together also about transparency and blowdown of a carbon dioxide. For example, it is difficult for the hydrogen-peroxide system bleaching agent which used together the chelating agent currently indicated by JP,59-164400,A for a carbon dioxide to be generated and to carry out Kamiichi as a product by decomposition under preservation.

[0008] as mentioned above -- even if high stabilization is realizable for improvement in the preservation stability of the bleaching agent constituent containing a bottle container only in respect of combination of a constituent -- so much -- coming out -- although engine performance in which it is inadequate as goods and sufficient also about the container filled up with a bleaching agent constituent is required, the research from a viewpoint of the bottle which may make gas penetrate without carrying out a liquid spill until now is seldom made.

[0009] Therefore, even when the mothball of the technical problem of this invention is especially carried out under severe conditions, it does not have the blister (henceforth the blister of a container) of the container by the gas produced by decomposition of the liquid bleaching agent with which the interior was filled up, and is to offer the liquid bleaching agent containing a container which can moreover also prevent the liquid presentation change inside a container.

[0010]

[Means for Solving the Problem] The blister by the gas produced by decomposition of a bleaching agent at the time of elevated-temperature long-term storage does not produce this invention persons. And research is wholeheartedly repeated in order to develop the bleaching agent containing a container which can also prevent an internal liquid presentation change. The gas leading to the blister of a container came to complete a header and this invention not only for oxygen but for the container made of thermoplastics which finds out that it is a carbon dioxide, as a result, has specific gas permeability and moisture permeability further, and has a specific configuration suiting the object.

[0011] that is, this invention offers the article for bleaching processing which comes to fill up the liquid bleaching agent constituent with which gas permeability is shown in the container made of thermoplastics (however, average thickness [] of the pars basilaris ossis occipitalis of a container -- 0.8-10mm -- it is -- oblateness [] of the wall section of the drum section of a container -- it is the container which has the part which are 1.0-1.2 at least in a part.) which is the range shown below below.

The gas permeability per 1l. of gas permeability content volume of the container made of thermoplastics is (a) under conditions (24 hours and 23 degrees C). Oxygen is 1 ml/atm. It is (b) above. Carbon dioxides are 2 ml/atm. It is (c) above. Moisture is 0.1g or less. In addition, the measuring method of gas permeability is shown in an example.

a liquid bleaching agent constituent -- the following (b) component - a (d) component are contained.

(b) component: -- a hydrogen peroxide or organic acid peroxide 0.1 - 10-% of the weight (**) -- component: -- surfactant 0.5 - 20-% of the weight (Ha) component: -- it is chosen out of the group which becomes a glycolic acid, a lactic acid, a glutaric acid, and a citric-acid list from these alkali-metal salts -- at least -- a kind 0.1 - 5-% of the weight (d) component: -- 0 - 10 % of the weight of bleaching activators.

[0012] [Container made of thermoplastics] It is important for the container made of thermoplastics in this invention to have the above specific gas permeability, and it needs to select the class of thermoplastics, and the thickness of this container so that this requirement may be satisfied. When this requirement is not satisfied, the article for bleaching processing which does not have the blister of a container and moreover does not have the liquid presentation change inside a container and for which this invention asks cannot be obtained.

[0013] As thermoplastics which can be used by this invention, polyolefines, such as polyethylene (high density polyethylene, low density polyethylene, straight chain-like low density polyethylene, etc.), polypropylene (a homopolymer, block polymer, random polymer), and polybutene, a polyvinyl chloride, polystyrene system polymers (polystyrene, styrene acrylonitrile resin, styrene-butadiene block copolymer), or such mixture are mentioned. Also especially in this, polyolefine is desirable.

[0014] Although polyethylene system resin, a polypropylene regin, or polybutene system resin may be used independently, or it may mix suitably and you may use when using polyolefine system resin, it is more effective to use the resin of a same system, in order for thermoforming,

such as blow molding, to perform continuation high production for the container of this invention.

[0015] The drum section of the container of this invention (refer to drawing 1.) a drum section means the part in which the cap of a container is inserted, and the part except a pars basilaris ossis occipitalis. although average thickness should just decide to depend also on the class of resin to be used, and its consistency, and to satisfy the gas permeability which is the requirements for a configuration of this invention -- usually -- 0.4 - 1.5 mm -- desirable -- 0.5-1.4mm It is the range.

[0016] moreover, in this invention, the class of thermoplastics with which the thickness of the pars basilaris ossis occipitalis (refer to drawing 1) of a container is used is not [how] scrupulous -- 0.8-10mm -- desirable -- 1.0-5.0mm It is important to set up so that it may become the range. When the thickness of a container pars basilaris ossis occipitalis is not in this range, the object for which this invention asks cannot be attained.

[0017] furthermore, this invention -- setting -- oblateness ** (it defines below) of the wall section (refer to drawing 1) of the drum section of a container -- 1.0-1.2 -- desirable -- 1.0-1.1 it is -- it is important to have a part at least in a part. Also when this requirement is not satisfied, the object for which this invention asks cannot be attained.

* Measure the major axis and minor axis of a bottle cross section by drum sections other than the bundle hand part part of the definition bottle of * oblateness (refer to drawing 5), and it is oblateness = (major axis of bottle cross section)/(minor axis of a bottle cross section).

It is alike and is computed more.

[0018] The cross-section sketch showing the desirable example of the container used for drawing 2 in this invention is mentioned.

[0019] Moreover, since the usual bleaching basis has many which have a problem in lightfastness, as for a bottle, protection-from-light nature may be needed. In this case, various pigments are added by the resin for bottle shaping. As an organic pigment, an azo system pigment, an anthraquinone system pigment, a phthalocyanine system pigment, a peri non system pigment, a perylene system pigment, a KIRIKURIDON system pigment, the dioxo diene system pigment, a thioindigo system pigment, iso in JIRINON system pigments, or such mixture can be used. Moreover, as an inorganic pigment, mineral or such mixture, such as clay, such as carbon, such as chromates, such as silicates, such as sulfides, such as metallic oxides, such as a red oxide, a titanium white, titan yellow, baking pigment Green, chromic oxide, cobalt blue, a silica, and an alumina, cadmium yellow, and cadmium red, and ultramarine blue, the chrome yellow, and Chrome Vermilion, and carbon black, talc, a kaolin, and clay, a calcium carbonate, and a magnesium carbonate, etc. can be used. Especially, a phthalocyanine system pigment, an azo system pigment, metallic-oxides pigments, or such mixture are excellent in weatherability, protection-from-light nature, thermal resistance, color enhancement, chemical resistance, etc., and are used suitably.

[0020] When using a phthalocyanine system pigment and an azo system pigment here, it does not interfere, even if it can also use the thing which is not restricted about the class, especially a configuration, etc., for example, was refined by altitude, or the thing which was heat-treated and removed the impurity etc. or some impurity is mixing.

[0021] Moreover, when using a titanium white among metallic oxides with the above-mentioned organic pigment, a titanium white usually does the designation of the titanium dioxide (TiO_2), but even if it uses what a small amount of titanium monoxide (TiO) and 3 oxidation 2 titanium (Ti_2O_3) mixed in this, it does not interfere, or even if impurities, such as a small amount of

silica, an alumina, other heavy metal, and a metallic oxide, are included, it can be used satisfactory at all. There is especially no limit also about the configuration of this titanium oxide. [0022] Moreover, in manufacture of the container of this invention, various kinds of antioxidants, an ultraviolet ray absorbent, antistatic agents (an amine compound, higher alcohol, monoglyceride, etc.), lubricant, etc. can be added to thermoplastics.

[0023] as mentioned above, layer (A) which consists of thermoplastics which contains a pigment further although the blister of a container can be prevented when the most if the container of described this invention is used Layer (B) which consists of thermoplastics which does not contain a pigment inside the thermoforming multilayer-structure container which it has -- then, further, there are few blisters of a container and they serve as a bottle container with the sufficient stability of a container.

[0024] It is (A) when considering as a thermoforming multilayer-structure container. The pigment added by the layer can use the above-mentioned thing. Moreover, layer (A) And layer (B) There is no thickness ratio, is suitably chosen with the class of the thermoplastics to be used or pigment, loadings, etc., and should just opt especially for a limit. usually, a thickness ratio -- the case of a two-layer container -- all thickness -- 100 ** -- if it carries out -- layer (B) desirable -- 0.01-50 -- receiving -- layer (A) 99.99-50 -- especially -- desirable -- layer (B) 1-45 -- receiving -- layer (A) the rate of 99-55 -- then, it is good.

[0025] The container used for this invention can be manufactured by various approaches, and there is especially no limit. Moreover, when considering as a multilayer container, it is a layer (A) like the above. And the multilayer container of a request of the layered product sheet which has a layer (B) by thermoforming, such as blow molding, can be obtained. Shaping of the container used for this invention is good on the conditions usually performed.

[0026] [Liquid bleaching agent constituent] The liquid bleaching agent constituent with which the container of this invention is filled up contains a (b) component - (d) component as mentioned above.

[0027] (b) Component : a hydrogen peroxide or organic acid peroxide It is used 0.1 to 10% of the weight. Organic acid peroxide expressed in a DODEKANJI peroxy acid, a mono-fault phthalic acid, a JI fault phthalic acid, or the following general formula as organic acid peroxide here [0028]

[Formula 1]

[0029] ***** .

[0030] (b) Component : a surfactant to the liquid bleaching agent constituent of this invention It is used one to 15% of the weight preferably 0.5 to 20% of the weight. As a surfactant used for this invention, an anionic surfactant, the Nonion nature surfactant, both-sexes activators, or such mixture are mentioned. The following are mentioned as an anionic surfactant. Alkyl or the alkenyl is C8-C24 here. What has a chain is said. For example, a straight chain or branched chain

alkylbenzene sulfonates, alkyl, or an alkenyl ethereal sulfate salt, Alkyl or an alkenyl sulfate, an olefin sulfonate, an alkane sulfonate, Saturation or an unsaturated fatty acid salt, alpha-sulfo fatty acid ester, alpha-sulfo fatty-acid salt, etc. are mentioned. As an Nonion nature surfactant Polyoxyalkylene alkyl or the alkenyl ether, polyoxyethylene alkyl phenyl ether, A higher-fatty-acid alkanol amide or its alkylene oxide addition product, sucrose fatty acid ester, fatty-acid glycerol monoester, an alkylamine oxide, a Pluronic surfactant, a sorbitan fatty acid ester, or its ethyleneoxide addition product is mentioned. As a surface active agent, carbobetaine, sulfobetaine, amine oxide, etc. are mentioned to others.

[0031] (c) Component : the chelating agent used for this invention is useful to the stabilization at the time of preservation of a liquid bleaching agent constituent, and improvement in a bleaching cleaning effect. the chelating agent used here is chosen from the group which consists of a glycolic acid, a lactic acid, a glutaric acid, citric acids, and these alkali-metal salts -- at least -- a kind -- it is -- the amount used 0.1 - 5 % of the weight -- desirable -- It is used 0.2 to 4% of the weight.

[0032] In this invention, other chelating agents can be used together by request. As these chelating agents (henceforth a concomitant use chelating agent), it is (1). Phosphoric-acid system compounds, these alkali-metal salts, or alkanolamine salts, such as an orthochromatic phosphoric acid, a pyrophosphoric acid, the Tripoli phosphoric acid, a metaphosphoric acid, hexametaphosphoric acid, and phytic acid.

(2) Ethane -1, 1-diphosphonic acid, ethane [- Phosphonic acid, these alkali-metal salts, or alkanolamine salts, such as 1 2-diphosphonic acid, and methane hydroxy phosphonic acid.] - 1, 1, 2-triphosphonic acid, and ethane-1-hydroxy - 1 and 1-diphosphonic acid and its derivative, ethane hydroxy - 1, 1, 2-triphosphonic acid, ethane -1, 2-dicarboxy

(3) 2-phosphono butane -1, 2-dicarboxylic acid, 1-phosphono butane - Phosphono carboxylic acids, these alkali-metal salts, or alkanolamine salts, such as 2, 3, 4-tricarboxylic acid, and alpha-methyl phosphono succinic acid.

(4) Amino acid, these alkali-metal salts, or alkanolamine salts, such as an aspartic acid, glutamic acid, and a glycine.

(5) Amino poly acetic acids, these alkali-metal salts, or alkanolamine salts, such as nitrilotriacetic acid, an iminodiacetic acid, ethylenediaminetetraacetic acid, a diethylenetriamine pentaacetic acid, a glycol ether diamine tetraacetic acid, hydroxy ethylimino 2 acetic acid, triethylenetetramine 6 acetic acid, and djenkolic acid.

(6) Organic acids, these alkali-metal salts, or alkanolamine salts, such as diglycolic acid, oxy-disuccinic acid, carboxymethyl malic acid, a tartaric acid, oxalic acid, a malic acid, oxy-disuccinic acid, a gluconic acid, a carboxymethyl succinic acid, and a carboxymethyl tartaric acid.
 (7) The alkali-metal salt or alkanolamine salt of aluminosilicate represented by Zeolite A.

(8) Amino poly (methylene phosphonic acid) and its alkali-metal salt or an alkanolamine salt, polyethylene polyamine poly (methylene phosphonic acid) and its alkali-metal salt, or an alkanolamine salt.

[0033] **** is mentioned. In this case, the amount of the concomitant use chelating agent used which can be set is 0.001 - 5 % of the weight preferably zero to 10% of the weight.

[0034] (d) Bleaching activator : the bleaching activator used for this invention is used in order to raise the bleaching engine performance of the article of this invention. Although all the conventionally well-known bleaching activators that can be used for this object can be used, alkanoloxo benzenesulfonic acid or its salt, an alkanoloxo benzoic acid or its salt,

tetraacetyylethylendiamin or JP,63-258447,A, JP,63-315666,A, or a bleaching activator given in JP,3-17196,A is illustrated, for example. the amount of the bleaching activator used -- 0 - 10 % of the weight -- desirable -- It is 0.5 - 7 % of the weight.

[0035] the bleaching agent constituent of this invention -- fundamental -- (**) -- although the need is accepted further and a (d) component is dissolved or distributed underwater, even if it improves stabilization and the freezing stability of the liquid in low temperature or blends a high DOROTO rope agent for a component - (Ha) a component, and the object that prevents the liquid separation in an elevated temperature, it does not interfere. The alcohol generally represented by the short chain alkylbenzene SUHON acid chloride represented by a toluenesulfonic acid salt, the xylene sulfonate, etc., ethanol, ethylene glycol, propylene glycol, hexylene glycol, the glycerol, etc. as such a high DOROTO rope agent, polyhydric alcohol, the alkylene glycol ether expressed with a bottom type are mentioned.

[0036]

[Formula 2] R1-O(QO) s-R2 (Q which shows the R2:hydrogen atom which shows the alkyl group of R1:C1-C6 among a formula, or a methyl group: the number of s:1-12 which show the alkylene group of carbon numbers 2-3 is shown.)

A high DOROTO rope agent can be blended about 0 to 30% of the weight into a bleaching agent constituent.

[0037] Furthermore, various compounds can be made to contain in the bleaching agent constituent of this invention. For example, amino polycarboxylic acid [which is represented by the phosphoric acid known as a stabilizing agent of a hydrogen peroxide barbituric acid, a uric acid, an acetanilide oxyquinoline, a phenacetin, etc.] and DL-alpha-TOKOFE Norian, gallic-acid derivative, butyl-ized hydroxyanisole (BHA), 2, and 6-G tert-butyl-4-methyl phenol (BHT) etc. can be added. Although the addition of these stabilizing agents is based also on the concentration of a hydrogen peroxide, it is usually good to make it contain 0.01 to 3% preferably about 0 to 5%.

[0038] Furthermore, in this invention, the matter well-known as a strange tenebrescence inhibitor can be included. As such matter, they are amino, such as amino acid, such as a phenylalanine, a histidine, a lysine, a thyrosin, and a methionine, amino acid salts, and hydroxy iminodiacetate, or an imide compound, one sort of the monomer in which the acrylonitrile which has acrylonitrile and quaternary ammonium further and copolymerization are possible, or two sorts or more of copolymers etc. In addition, although an optical isomer exists in amino acid, an optical isomer does not involve in the effectiveness of this invention. Therefore, it is also possible to use the amino acid compounded chemically.

[0039] Since the bleaching effectiveness over white object fiber is increased, fluorescent brighteners, such as Tinopal (Tinopal) [the Ciba-Geigy (Ciba-Geigy) make] CBS, Tinopal SWN [the Ciba-Geigy make], and the Color Index fluorescent brighteners 28, 40, 61, and 71, may be added 0 to 5% as a fluorescent brightener.

[0040] It is possible to add a thickener 0 to 20% in order to raise the viscosity of a constituent and to raise user-friendliness. Generally, they are synthetic macromolecules, such as polyacrylate, an acrylic-acid maleic-acid copolymer, a carboxymethyl-cellulose derivative, methyl cellulose, and a hydroxymethyl cellulose, xanthan gum, guar gum, naturally-occurring polymers called Kelzan, a montmorillonite, a water expansive clay mineral called veegum. Moreover, it is also possible to give a viscoelasticity rheology property by combining an amphoteric surface active agent and an anionic surface active agent as indicated by JP,1-319600,A.

[0041] moreover, optimum dose (each 0- about 2%) combination of the various minute amount additives, such as a coloring agent still like a color or a pigment, perfume, silicone, a germicide, an ultraviolet ray absorbent, and an inorganic electrolyte, can be carried out at this invention. In addition, especially the acid dye that has hydrogen-peroxide-proof nature with an acidic solution as a color is desirable.

[0042] Moreover, in this invention constituent, since the bleaching engine performance is raised, well-known enzymes (a cellulase, an amylase, a protease, lipase, etc.) can be blended if needed conventionally.

[0043]

[Example] Hereafter, although an example is given and explained, this invention is not limited to these examples.

[0044] The container was fabricated from the thermoplastics and the pigment which are shown in a table 2, and the container of the configuration shown in drawing 3 was obtained. About each obtained container, average thickness of the pars basilaris ossis occipitalis of a container was measured by the approach of the following **, oblateness of the wall of the drum section of a container was measured by the approach of the following **, and gas permeability was measured by the approach of the following **. Furthermore, restoration seal of the liquid bleaching agent constituent of the presentation shown in a table 1 was carried out at each container, and the approach of the following ** estimated the swelling of the container after preservation. The result is shown in a table 2.

[0045] ** Cut a container pars basilaris ossis occipitalis so that it may become a cross joint in every direction like measuring method drawing 4 (a, b) of the average thickness of the pars basilaris ossis occipitalis of a container, measure the thickness of a cross section with a total of five-place slide calipers, and take the average. The part which put x mark is a part which measured thickness among drawing 4.

[0046] ** Like measurement drawing 5 of the oblateness of the wall section of the drum section of a container, measure the major axis (X) of a container cross section, and a minor axis (Y), and compute with the following operation expression.

[0047]

[Equation 1]

[0048] ** Measurement of gas permeability of a container (1) Oxygen and the measurement container of carbon-dioxide permeability were filled up with each gas, and permeability was measured with the following measurement machine under 23-degree C conditions for 24 hours. measurement machine: -- "gas radiographic examination machine" GPMmade from Gas-chromatograph Industry- 250 (2) The measurement container of moisture permeability was filled up with water, and permeability was measured with the following measurement machine under 23-degree C conditions for 24 hours.

[0049] Measurement machine: Lyssy "Gas radiographic examination machine" by the shrine (France country)

[0050] ** It is 600ml to each container (maximum injection quantity of 780ml) which shows the liquid bleaching agent constituent shown in the assessment table 1 of the container deformation after preservation in a table 2. Restoration seal was carried out and it saved for 30 days under 40-

degree-C conditions, and outside, the swelling of ejection and a container was observed outside with the naked eye, and the sample after a preservation test was evaluated. The valuation basis of change here of the swelling and smell of a container is as follows. In addition, ten containers performed each trial and the number of O, **, and x showed the result.

- Valuation-basis [of the swelling of a container] O -- Change-less ** -- Although the container pars basilaris ossis occipitalis has swollen a little, stability is x which is not bad. -- It is [0051]. [GURAGURA / stability / the container pars basilaris ossis occipitalis has swollen a little, and / 0051 / bad]

[A table 1]

[0052]
[A table 2]

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[0053] 1) High-density-polyethylene resin; show REXX by Showa Denko K.K. 5503D Activity

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2 low-density-polyethylene resin; Mitsui poly chemical Myra Son 401 Activity 3 polystyrene resin; HIPS activity by Showa Denko K.K.

TECHNICAL FIELD

[Industrial Application] This invention relates to the article for bleaching processing used for clearance of dirt, such as tableware and a toilet, and mold etc. at the bleaching list of clothing.

TECHNICAL PROBLEM

[The technical problem which a Prior art and this invention tend to solve] Before, the water solution of a hypochlorite and a hydrogen peroxide has been widely used for clearance of the dirt of hard surfaces, such as bleaching of clothing, and tableware, a toilet, clearance of mold, etc. from the goodness of the user-friendliness which is the liquid. Usually, these liquid bleaching agents The resin bottle which consists of rigid plastics, such as high polyethylene of sealing nature, as 0.5 - 10% of the weight of a water solution is filled up, and it is widely marketed as a home liquid bleaching agent. Or the liquid bleaching agent which is distributed and is offered into the water solution of other inorganic peroxy acids and organic acid peroxide or a solvent is also large, and it is known.

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[0005] Examination should do many things also about improvement in the stability of the bleaching agent using these hydrogen-peroxide-solution solutions. To JP,40-7774,B, for example, acid sodium pyrophosphate, the storage which used together neutral sodium pyrophosphate and acid potassium pyrophosphate -- a stable weak acidic liquid bleaching agent To JP,49-52784,A, alkylidene diphosphonic acid, ethylenediaminetetraacetic acid, pH which blended the organic acid and fusibility tin salt which were chosen from a diethylenetriamine pentaacetic acid and nitrilotrimethylenephosphonate, and ammonium salt The stable liquid bleaching agent of 0.5-7 The hydrogen-peroxide stabilizing agent which becomes JP,52-103386,A from a Polly alpha-hydroxy acrylic acid Add water to a magnesium compound and acids at JP,54-10309,A, and it is made to complex in neutralization reaction. That the liquefied object which gave the hydrophilic property controls disassembly of a hydrogen peroxide by pH 4-6 pH which blended with JP,55-108500,A the acid chosen from an organic acid, a phosphoric acid, and a boric acid and the nitride 1.8-5.5 A stable liquid bleaching agent Demonstrating a

multiplication stabilization effect, if Polly alpha-hydroxy acrylate is blended with JP,55-76161,A by the alkaline hydrogen-peroxide-bleaching system which used the condensed phosphate as a stabilizing agent. The stability assistant of the hydrogen-peroxide system bleaching agent which becomes JP,57-154457,A from the copolymer of an acrylic acid, acrylic ester, and/or polyethylene-glycol methacrylate. From the peroxidation water which used together Polly alpha-hydroxy acrylate and organic phosphonate, it has spread through JP,62-185797,A considerably as a bleaching agent for garments. However, improving effectiveness greatly is checked by being unable to say to be an oxygen system bleaching agent sufficient bleaching force to the hard dirt of especially a kitchen, considering concomitant use of various chelating agents, consequently using various chelating agents together.

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[0009] Therefore, even when the mothball of the technical problem of this invention is especially carried out under severe conditions, it does not have the blister (henceforth the blister of a container) of the container by the gas produced by decomposition of the liquid bleaching agent with which the interior was filled up, and is to offer the liquid bleaching agent containing a container which can moreover also prevent the liquid presentation change inside a container.

MEANS

[Means for Solving the Problem] The blister by the gas produced by decomposition of a bleaching agent at the time of elevated-temperature long-term storage does not produce this invention persons. And research is wholeheartedly repeated in order to develop the bleaching agent containing a container which can also prevent an internal liquid presentation change. The gas leading to the blister of a container came to complete a header and this invention not only for oxygen but for the container made of thermoplastics which finds out that it is a carbon dioxide, as a result, has specific gas permeability and moisture permeability further, and has a specific configuration suiting the object.

[0011] that is, this invention offers the article for bleaching processing which comes to fill up the liquid bleaching agent constituent with which gas permeability is shown in the container made of

thermoplastics (however, average thickness [] of the pars basilaris ossis occipitalis of a container -- 0.8-10mm -- it is -- oblateness [] of the wall section of the drum section of a container -- it is the container which has the part which are 1.0-1.2 at least in a part.) which is the range shown below below.

The gas permeability per 1l. of gas permeability content volume of the container made of thermoplastics is (a) under conditions (24 hours and 23 degrees C). Oxygen is 1 ml/atm. It is (b) above. Carbon dioxides are 2 ml/atm. It is (c) above. Moisture is 0.1g or less. In addition, the measuring method of gas permeability is shown in an example.

a liquid bleaching agent constituent -- the following (b) component - a (d) component are contained.

(b) component: -- a hydrogen peroxide or organic acid peroxide 0.1 - 10-% of the weight (**) -- component: -- surfactant 0.5 - 20-% of the weight (Ha) component: -- it is chosen out of the group which becomes a glycolic acid, a lactic acid, a glutaric acid, and a citric-acid list from these alkali-metal salts -- at least -- a kind 0.1 - 5-% of the weight (d) component: -- 0 - 10 % of the weight of bleaching activators.

[0012] [Container made of thermoplastics] It is important for the container made of thermoplastics in this invention to have the above specific gas permeability, and it needs to select the class of thermoplastics, and the thickness of this container so that this requirement may be satisfied. When this requirement is not satisfied, the article for bleaching processing which does not have the blister of a container and moreover does not have the liquid presentation change inside a container and for which this invention asks cannot be obtained.

[0013] As thermoplastics which can be used by this invention, polyolefines, such as polyethylene (high density polyethylene, low density polyethylene, straight chain-like low density polyethylene, etc.), polypropylene (a homopolymer, block polymer, random polymer), and polybutene, a polyvinyl chloride, polystyrene system polymers (polystyrene, styrene acrylonitrile resin, styrene-butadiene block copolymer), or such mixture are mentioned. Also especially in this, polyolefine is desirable.

[0014] Although polyethylene system resin, a polypropylene regin, or polybutene system resin may be used independently, or it may mix suitably and you may use when using polyolefine system resin, it is more effective to use the resin of a same system, in order for thermoforming, such as blow molding, to perform continuation high production for the container of this invention.

[0015] The drum section of the container of this invention (refer to drawing 1 .) a drum section means the part in which the cap of a container is inserted, and the part except a pars basilaris ossis occipitalis. although average thickness should just decide to depend also on the class of resin to be used, and its consistency, and to satisfy the gas permeability which is the requirements for a configuration of this invention -- usually -- 0.4 - 1.5 mm -- desirable -- 0.5-1.4mm It is the range.

[0016] moreover, in this invention, the class of thermoplastics with which the thickness of the pars basilaris ossis occipitalis (refer to drawing 1) of a container is used is not [how] scrupulous -- 0.8-10mm -- desirable -- 1.0-5.0mm It is important to set up so that it may become the range. When the thickness of a container pars basilaris ossis occipitalis is not in this range, the object for which this invention asks cannot be attained.

[0017] furthermore, this invention -- setting -- oblateness ** (it defines below) of the wall section (refer to drawing 1) of the drum section of a container -- 1.0-1.2 -- desirable -- 1.0-1.1 it is -- it is important to have a part at least in a part. Also when this requirement is not satisfied, the object

for which this invention asks cannot be attained.

* Measure the major axis and minor axis of a bottle cross section by drum sections other than the bundle hand part part of the definition bottle of * oblateness (refer to drawing 5), and it is oblateness =(major axis of bottle cross section)/(minor axis of a bottle cross section).

It is alike and is computed more.

[0018] The cross-section sketch showing the desirable example of the container used for drawing 2 in this invention is mentioned.

[0019] Moreover, since the usual bleaching basis has many which have a problem in lightfastness, as for a bottle, protection-from-light nature may be needed. In this case, various pigments are added by the resin for bottle shaping. As an organic pigment, an azo system pigment, an anthraquinone system pigment, a phthalocyanine system pigment, a peri non system pigment, a perylene system pigment, a KIRIKURIDON system pigment, the dioxa diene system pigment, a thioindigo system pigment, iso in JIRINON system pigments, or such mixture can be used. Moreover, as an inorganic pigment, mineral or such mixture, such as clay, such as carbon, such as chromates, such as silicates, such as sulfides, such as metallic oxides, such as a red oxide, a titanium white, titan yellow, baking pigment Green, chromic oxide, cobalt blue, a silica, and an alumina, cadmium yellow, and cadmium red, and ultramarine blue, the chrome yellow, and Chrome Vermilion, and carbon black, talc, a kaolin, and clay, a calcium carbonate, and a magnesium carbonate, etc. can be used. Especially, a phthalocyanine system pigment, an azo system pigment, metallic-oxides pigments, or such mixture are excellent in weatherability, protection-from-light nature, thermal resistance, color enhancement, chemical resistance, etc., and are used suitably.

[0020] When using a phthalocyanine system pigment and an azo system pigment here, it does not interfere, even if it can also use the thing which is not restricted about the class, especially a configuration, etc., for example, was refined by altitude, or the thing which was heat-treated and removed the impurity etc. or some impurity is mixing.

[0021] Moreover, when using a titanium white among metallic oxides with the above-mentioned organic pigment, a titanium white usually does the designation of the titanium dioxide (TiO_2), but even if it uses what a small amount of titanium monoxide (TiO) and 3 oxidization 2 titanium (Ti_2O_3) mixed in this, it does not interfere, or even if impurities, such as a small amount of silica, an alumina, other heavy metal, and a metallic oxide, are included, it can be used satisfactory at all. There is especially no limit also about the configuration of this titanium oxide.

[0022] Moreover, in manufacture of the container of this invention, various kinds of antioxidants, an ultraviolet ray absorbent, antistatic agents (an amine compound, higher alcohol, monoglyceride, etc.), lubricant, etc. can be added to thermoplastics.

[0023] as mentioned above, layer (A) which consists of thermoplastics which contains a pigment further although the blister of a container can be prevented when the most if the container of described this invention is used Layer (B) which consists of thermoplastics which does not contain a pigment inside the thermoforming multilayer-structure container which it has -- then, further, there are few blisters of a container and they serve as a bottle container with the sufficient stability of a container.

[0024] It is (A) when considering as a thermoforming multilayer-structure container. The pigment added by the layer can use the above-mentioned thing. Moreover, layer (A) And layer (B) There is no thickness ratio, is suitably chosen with the class of the thermoplastics to be used or pigment, loadings, etc., and should just opt especially for a limit. usually, a thickness ratio -- the case of a two-layer container -- all thickness -- 100 ** -- if it carries out -- layer (B) desirable

-- 0.01-50 -- receiving -- layer (A) 99.99-50 -- especially -- desirable -- layer (B) 1-45 -- receiving -- layer (A) the rate of 99-55 -- then, it is good.

[0025] The container used for this invention can be manufactured by various approaches, and there is especially no limit. Moreover, when considering as a multilayer container, it is a layer (A) like the above. And the multilayer container of a request of the layered product sheet which has a layer (B) by thermoforming, such as blow molding, can be obtained. Shaping of the container used for this invention is good on the conditions usually performed.

[0026] [Liquid bleaching agent constituent] The liquid bleaching agent constituent with which the container of this invention is filled up contains a (b) component - (d) component as mentioned above.

[0027] (b) Component : a hydrogen peroxide or organic acid peroxide It is used 0.1 to 10% of the weight. Organic acid peroxide expressed in a DODEKANJI peroxy acid, a mono-fault phthalic acid, a JI fault phthalic acid, or the following general formula as organic acid peroxide here [0028]

[Formula 1]

[0029] ***** .

[0030] (b) Component : a surfactant to the liquid bleaching agent constituent of this invention It is used one to 15% of the weight preferably 0.5 to 20% of the weight. As a surfactant used for this invention, an anionic surfactant, the Nonion nature surfactant, both-sexes activators, or such mixture are mentioned. The following are mentioned as an anionic surfactant. Alkyl or the alkenyl is C8-C24 here. What has a chain is said. For example, a straight chain or branched chain alkylbenzene sulfonates, alkyl, or an alkenyl ethereal sulfate salt, Alkyl or an alkenyl sulfate, an olefin sulfonate, an alkane sulfonate, Saturation or an unsaturated fatty acid salt, alpha-sulfo fatty acid ester, alpha-sulfo fatty-acid salt, etc. are mentioned. As an Nonion nature surfactant Polyoxyalkylene alkyl or the alkenyl ether, polyoxyethylene alkyl phenyl ether, A higher-fatty-acid alkanol amide or its alkylene oxide addition product, sucrose fatty acid ester, fatty-acid glycerol monoester, an alkylamine oxide, a Pluronic surfactant, a sorbitan fatty acid ester, or its ethyleneoxide addition product is mentioned. As a surface active agent, carbobetaine, sulfobetaine, amine oxide, etc. are mentioned to others.

[0031] (c) Component : the chelating agent used for this invention is useful to the stabilization at the time of preservation of a liquid bleaching agent constituent, and improvement in a bleaching cleaning effect. the chelating agent used here is chosen from the group which consists of a glycolic acid, a lactic acid, a glutaric acid, citric acids, and these alkali-metal salts -- at least -- a kind -- it is -- the amount used 0.1 - 5 % of the weight -- desirable -- It is used 0.2 to 4% of the weight.

[0032] In this invention, other chelating agents can be used together by request. As these chelating agents (henceforth a concomitant use chelating agent), it is (1). Phosphoric-acid system

compounds, these alkali-metal salts, or alkanolamine salts, such as an orthochromatic phosphoric acid, a pyrophosphoric acid, the Tripoli phosphoric acid, a metaphosphoric acid, hexametaphosphoric acid, and phytic acid.

(2) Ethane -1, 1-diphosphonic acid, ethane [- Phosphonic acid, these alkali-metal salts, or alkanolamine salts, such as 1 2-diphosphonic acid, and methane hydroxy phosphonic acid.] - 1, 1, 2-triphosphonic acid, and ethane-1-hydroxy - 1 and 1-diphosphonic acid and its derivative, ethane hydroxy - 1, 1, 2-triphosphonic acid, ethane -1, 2-dicarboxy

(3) 2-phosphono butane -1, 2-dicarboxylic acid, 1-phosphono butane - Phosphono carboxylic acids, these alkali-metal salts, or alkanolamine salts, such as 2, 3, 4-tricarboxylic acid, and alpha-methyl phosphono succinic acid.

(4) Amino acid, these alkali-metal salts, or alkanolamine salts, such as an aspartic acid, glutamic acid, and a glycine.

(5) Amino poly acetic acids, these alkali-metal salts, or alkanolamine salts, such as nitrilotriacetic acid, an iminodiacetic acid, ethylenediaminetetraacetic acid, a diethylenetriamine pentaacetic acid, a glycol ether diamine tetraacetic acid, hydroxy ethylimino 2 acetic acid, triethylenetetramine 6 acetic acid, and djenkolic acid.

(6) Organic acids, these alkali-metal salts, or alkanolamine salts, such as diglycolic acid, oxy-disuccinic acid, carboxymethyl malic acid, a tartaric acid, oxalic acid, a malic acid, oxy-disuccinic acid, a gluconic acid, a carboxymethyl succinic acid, and a carboxymethyl tartaric acid.

(7) The alkali-metal salt or alkanolamine salt of aluminosilicate represented by Zeolite A.

(8) Amino poly (methylene phosphonic acid) and its alkali-metal salt or an alkanolamine salt, polyethylene polyamine poly (methylene phosphonic acid) and its alkali-metal salt, or an alkanolamine salt.

[0033] **** is mentioned. In this case, the amount of the concomitant use chelating agent used which can be set is 0.001 - 5 % of the weight preferably zero to 10% of the weight.

[0034] (d) Bleaching activator : the bleaching activator used for this invention is used in order to raise the bleaching engine performance of the article of this invention. Although all the conventionally well-known bleaching activators that can be used for this object can be used, alkanoloxo benzenesulfonic acid or its salt, an alkanoloxo benzoic acid or its salt, tetraacetyl ethylendiamin or JP,63-258447,A, JP,63-315666,A, or a bleaching activator given in JP,3-17196,A is illustrated, for example. the amount of the bleaching activator used -- 0 - 10 % of the weight -- desirable -- It is 0.5 - 7 % of the weight.

[0035] the bleaching agent constituent of this invention -- fundamental -- (**) -- although the need is accepted further and a (d) component is dissolved or distributed underwater, even if it improves stabilization and the freezing stability of the liquid in low temperature or blends a high DOROTO rope agent for a component - (Ha) a component, and the object that prevents the liquid separation in an elevated temperature, it does not interfere. The alcohol generally represented by the short chain alkylbenzene SUHON acid chloride represented by a toluenesulfonic acid salt, the xylene sulfonate, etc., ethanol, ethylene glycol, propylene glycol, hexylene glycol, the glycerol, etc. as such a high DOROTO rope agent, polyhydric alcohol, the alkylene glycol ether expressed with a bottom type are mentioned.

[0036]

[Formula 2] R1-O(QO) s-R2 (Q which shows the R2:hydrogen atom which shows the alkyl group of R1:C1-C6 among a formula, or a methyl group: the number of s:1-12 which show the alkylene group of carbon numbers 2-3 is shown.)

A high DOROTO rope agent can be blended about 0 to 30% of the weight into a bleaching agent constituent.

[0037] Furthermore, various compounds can be made to contain in the bleaching agent constituent of this invention. For example, amino polycarboxylic acid [which is represented by the phosphoric acid known as a stabilizing agent of a hydrogen peroxide barbituric acid, a uric acid, an acetanilide oxyquinoline, a phenacetin, etc.] and DL-alpha-TOKOFE Norian, gallic-acid derivative, butyl-ized hydroxyanisole (BHA), 2, and 6-G tert-butyl-4-methyl phenol (BHT) etc. can be added. Although the addition of these stabilizing agents is based also on the concentration of a hydrogen peroxide, it is usually good to make it contain 0.01 to 3% preferably about 0 to 5%.

[0038] Furthermore, in this invention, the matter well-known as a strange tenebrescence inhibitor can be included. As such matter, they are amino, such as amino acid, such as a phenylalanine, a histidine, a lysine, a thyrosin, and a methionine, amino acid salts, and hydroxy iminodiacetate, or an imide compound, one sort of the monomer in which the acrylonitrile which has acrylonitrile and quaternary ammonium further and copolymerization are possible, or two sorts or more of copolymers etc. In addition, although an optical isomer exists in amino acid, an optical isomer does not involve in the effectiveness of this invention. Therefore, it is also possible to use the amino acid compounded chemically.

[0039] Since the bleaching effectiveness over white object fiber is increased, fluorescent brighteners, such as Tinopal (Tinopal) [the Ciba-Geigy (Ciba-Geigy) make] CBS, Tinopal SWN [the Ciba-Geigy make], and the Color Index fluorescent brighteners 28, 40, 61, and 71, may be added 0 to 5% as a fluorescent brightener.

[0040] It is possible to add a thickener 0 to 20% in order to raise the viscosity of a constituent and to raise user-friendliness. Generally, they are synthetic macromolecules, such as polyacrylate, an acrylic-acid maleic-acid copolymer, a carboxymethyl-cellulose derivative, methyl cellulose, and a hydroxymethyl cellulose, xanthan gum, guar gum, naturally-occurring polymers called Kelzan, a montmorillonite, a water expansive clay mineral called veegum. Moreover, it is also possible to give a viscoelasticity rheology property by combining an amphoteric surface active agent and an anionic surface active agent as indicated by JP,1-319600,A.

[0041] moreover, optimum dose (each 0- about 2%) combination of the various minute amount additives, such as a coloring agent still like a color or a pigment, perfume, silicone, a germicide, an ultraviolet ray absorbent, and an inorganic electrolyte, can be carried out at this invention. In addition, especially the acid dye that has hydrogen-peroxide-proof nature with an acidic solution as a color is desirable.

[0042] Moreover, in this invention constituent, since the bleaching engine performance is raised, well-known enzymes (a cellulase, an amylase, a protease, lipase, etc.) can be blended if needed conventionally.

EXAMPLE

[Example] Hereafter, although an example is given and explained, this invention is not limited to these examples.

[0044] The container was fabricated from the thermoplastics and the pigment which are shown in

a table 2, and the container of the configuration shown in drawing 3 was obtained. About each obtained container, average thickness of the pars basilaris ossis occipitalis of a container was measured by the approach of the following **, oblateness of the wall of the drum section of a container was measured by the approach of the following **, and gas permeability was measured by the approach of the following **. Furthermore, restoration seal of the liquid bleaching agent constituent of the presentation shown in a table 1 was carried out at each container, and the approach of the following ** estimated the swelling of the container after preservation. The result is shown in a table 2.

[0045] ** Cut a container pars basilaris ossis occipitalis so that it may become a cross joint in every direction like measuring method drawing 4 (a, b) of the average thickness of the pars basilaris ossis occipitalis of a container, measure the thickness of a cross section with a total of five-place slide calipers, and take the average. The part which put x mark is a part which measured thickness among drawing 4.

[0046] ** Like measurement drawing 5 of the oblateness of the wall section of the drum section of a container, measure the major axis (X) of a container cross section, and a minor axis (Y), and compute with the following operation expression.

[0047]

[Equation 1]

[0048] ** Measurement of gas permeability of a container (1) Oxygen and the measurement container of carbon-dioxide permeability were filled up with each gas, and permeability was measured with the following measurement machine under 23-degree C conditions for 24 hours. measurement machine: -- "gas radiographic examination machine" GPMmade from Gas-chromatograph Industry- 250 (2) The measurement container of moisture permeability was filled up with water, and permeability was measured with the following measurement machine under 23-degree C conditions for 24 hours.

[0049] Measurement machine: Lyssy "Gas radiographic examination machine" by the shrine (France country)

[0050] ** It is 600ml to each container (maximum injection quantity of 780ml) which shows the liquid bleaching agent constituent shown in the assessment table 1 of the container deformation after preservation in a table 2. Restoration seal was carried out and it saved for 30 days under 40-degree-C conditions, and outside, the swelling of ejection and a container was observed outside with the naked eye, and the sample after a preservation test was evaluated. The valuation basis of change here of the swelling and smell of a container is as follows. In addition, ten containers performed each trial and the number of O, **, and x showed the result.

- Valuation-basis [of the swelling of a container] O -- Change-less ** -- Although the container pars basilaris ossis occipitalis has swollen a little, stability is x which is not bad. -- It is [0051]. [GURAGURA / stability / the container pars basilaris ossis occipitalis has swollen a little, and / 0051 / bad]

[A table 1]

[0052]
[A table 2]

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[0053] 1) High-density-polyethylene resin; show REXX by Showa Denko K.K. 5503D Activity

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2 low-density-polyethylene resin; Mitsui poly chemical Myra Son 401 Activity 3 polystyrene resin; HIPS activity by Showa Denko K.K.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The cross-section sketch of the container made of thermoplastics used for this invention.

[Drawing 2] The cross-section sketch showing the example of the container made of thermoplastics used for this invention.

[Drawing 3] The sketch showing the container made of thermoplastics used for the example.

[Drawing 4] The sketch showing the measurement part of a container pars basilaris ossis occipitalis.

[Drawing 5] The cross-section sketch of a container drum section.

[Description of Notations]

1 -- Cap

2 -- Wall

3 -- Drum section

4 -- Pars basilaris ossis occipitalis

5 -- Handle

X -- Major axis

Y -- Minor axis